



## SEQUENCE LISTING

RECEIVED  
JUL 22 2003  
TECH CENTER 1600/2800

&lt;110&gt; YE, Jane et al.

<120> ISOLATED HUMAN RAS-LIKE PROTEINS,  
NUCLEIC ACID MOLECULES ENCODING THESE HUMAN RAS-LIKE  
PROTEINS, AND USES THEREOF

&lt;130&gt; CL001188

&lt;140&gt; 09/817,198

&lt;141&gt; 2001-03-27

&lt;160&gt; 38

&lt;170&gt; FastSEQ for Windows Version 4.0

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&lt;211&gt; 3257

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

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 g 601

<210> 16  
 <211> 601  
 <212> DNA  
 <213> Homo sapiens

<400> 16  
atgccagggtg ccatgctaag atttggggac acagtgggtga ccaaaacaga cagaaaccaa 60  
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ctagtacccc cctttccctg gcagtgccag ggtctgagaa ggaagagtga ggtggtgagg 180  
aggtgtgaag cagtgggggtg acctgagagg agaggatggg gtggctttgc ctcaaggctt 240  
gggcccctgc taggtgtcgc tctgcctcag gcctctgttt ctccctcctga cacaggcaca 300  
ractcggcct cccacccctt cccaaggac atgaccttgg gaaggaacat atctgaagcc 360  
cgcgagggtt ttccgctgct gtgcatctgt gccacagatc cgcagatgca cccacagctg 420  
ggagcaccgg ttccctccgc ctacctgcac tccctgggtt ctgttccctc ctccctcctc 480  
ttccttctcc ccgctcccca gacaggctgg tgatgagctt tataacatga aagctgatat 540  
ttggccatta tccttctacc ctgattgcc a gctcttctca gagtgccttc ttctgtaatc 600  
c 601

<210> 17  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 17  
ctgggtgaagg ctttgaagag gaagtgcacat ttgagtggag tcttgaagac taggcaggat 60  
tctccagggg ccctgggtgt gggggaagca cacatcctct tccctgtagg aggtgctgtg 120  
gagaacacct ccagtggggc tgctactctt cagccttgct ggggccagct ggagtggcca 180  
caccatgggtc acaccagctg aagttcaaga agccccttgc caggagattg ctttgctggc 240  
tctgggtgag ggcagggtgca tctggaagcc cccttcttct taagatgttt gctcctgagt 300  
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gagaaggagg ctggaggagt gagtggctcag tagcctgggt ggtccttggct gcctctgtgg 420  
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ggggagcgag atgggggtggc tggagcacac tgcacatgtc accaaggctc tagggaggtc 540  
tgtgcacaag gcagtgggaa aagcaagggg aagaccagc ctggtcaaca tgggtgaaacc 600  
c 601

<210> 18  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 18  
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tcttttttgg tgtttgagg ctgcacaggg tgacctctt agaggtgacc tcctgccaca 120  
accacagga ggtgcacatg gccacacat gctggtttcc tgcagtggga ggggctgggg 180  
cactcctggg acctgtgctt ggtaactgga gctggcctgg ccctggggat tgggtgtctg 240  
ccttgggttt caggtgtatt aggttgttcc tcgttgtgga gtctcattac taatgaaaag 300  
ytcaggtcgc actgctgggt ctttgggctg tggttgatcc tggtgataac atttggcacc 360  
cagaggcagc cctgtttcca ctgaagcatg cggagcttgg ctggcaggca ggcaagctgg 420  
cagctgccct taacctatga ggtgctggcc cgctagtagg cacaccctac ctgtgccaga 480  
attgaggttg tagccagact ccaggagcca tctgggcccc acagggggcg gcatttcttc 540  
tttttgttga aacattccag ccaagtgtg gcttgggctt catctctctg tcccactctc 600  
c 601

<210> 19  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 19  
ccctgtgtta tgggtttttac accttatctc acaatcttaa aaaaaaatt ctctgagaat 60

```

cctctgtcac cccacttta caggtgagga aactgaggca aagataggct aactggcttc 120
cccaacacca tgcaggtaat tagtgataaa ggcagggttg gaaccaaact tgacctccca 180
attgtgtctt taatggccag gacactctgt gtcttgagcc acacttcctc catgttttct 240
agggttttct agggaggcag acagtgatgg gaaggggtgt tctttagtgt ggatgtgccc 300
ygcctgtccc tttctgtaag cgtcacagca cctccactgc tgtactgggg aggcaccaag 360
tttttccctg tttgccacc caaggcgagc tagcttagga gtcacgtgag tgctgggtgt 420
ctcgctgctg gcatccctct atcctgcccc tgccccgggt gccagagga gggccctgcc 480
tgtcttccca gttctccaac agcagcgctg tcccagcacc ctcggtctcc agttgtggcc 540
tggcagctgc tggggcagac accatacaga cagagtcaca gcaggaagag gatggggccc 600
a                                                                 601

```

<210> 20

<211> 601

<212> DNA

<213> Homo sapiens

<400> 20

```

ggaaggggtg ttcttttagtg tggatgtgcc ctgcctgctc ctttctgtaa gcgtcacagc 60
acctccactg ctgtactggg gaggcaccaa gtttttccct gtttgccac ccaaggcgag 120
ctagcttagg agtcacgtga gtgctgggtg tctcgctgc tgcacctc tatcctgcc 180
ctgccccggg tgccagagg agggccctgc ctgtcttccc agttctcaa cagcagcgct 240
gtcccagcac cctcggtctc cagttgtggc ctggcagctg ctggggcaga caccatacag 300
mcagagtcac agcaggaaga ggatggggcc cagggtgct gcctcaggcc atggctgcat 360
ggcaccatca gttgattgag gagcttttct tgccaatgtc tgaggcatca ggtggcagga 420
cacgtctccc tgctcttaag cctcaggcat gcagcccttc ttatgctctc tggggtgagg 480
gggagatccc cctcatggaa ttgctttttt tttttttttt ttttttttga gacagggtcc 540
tgctctgtca ctcaggctgg agtgcagcct caacctccca gactcaagtg atcctcctgc 600
c                                                                 601

```

<210> 21

<211> 601

<212> DNA

<213> Homo sapiens

<220>

<221> variation

<222> (301)...(301)

<223> 't' may be either present or absent

<400> 21

```

tctccaacag cagcgctgtc ccagcaccct cgggctccag ttgtggcctg gcagctgctg 60
gggcagacac catacagaca gagtcacagc aggaagagga tggggcccag ggctgctgcc 120
tcaggccatg gctgcatggc accatcagtt gattgaggag cttttcttgc caatgtctga 180
ggcatcaggt ggcaggacac gtctccctgc tcttaagcct caggcatgca gcccttctta 240
tgctctctgg ggtgaggggg agatccccct catggaattg cttttttttt tttttttttt 300
tttttgagac aggttctctg tctgtcactc aggctggagt gcagcctcaa cctcccagac 360
tcaagtgatc ctctgcctc agcctcccga gtagctggga ccacaggtgg acaccatcac 420
acctgggttt ttttgttttt tgttttttgt tttctagaga tggggtctca ctttcttgct 480
cagtcctggc tcgaactcct gggcgcaagc agtctcccca cctcgtcttc ccaaagtgtt 540
tggattacag gtgtgagcca ctgtgcttgg cctttttatt tatttagaat ttgttttgga 600
a                                                                 601

```

<210> 22

<211> 601

<212> DNA

<213> Homo sapiens



<400> 22  
ggatgtttct tccatgacat atatagctct tgaaactact tctatctaata atcacccaca 60  
gtgctgttaa aaatacagat ttctgggcct caccctcaaa ttatgattca gtaggtctag 120  
gcacgtcaag gtcattgttt ttgtctttgt ttttaagtcac cccaggtgat tctaaagccg 180  
aagctctgca aagcacacct tgagaaacag agaactcttg tgctctcgct ctcttgacac 240  
ttcaggtgca aaacttttgt cctaattgtcg ttctcaaact tacgcatgtg tgagaatcac 300  
ygtgagagct tattgaaact gattgcgagg ccccatacct agagggcctg attctatagg 360  
tctgaggtaa ggcccaagaa tttgcatatt tgcatttcgt tttcttttcc tttcttttct 420  
tttttttttt ttttgagatg aagtctcacc ctgtcgccca gactggagtg cagtggcatg 480  
atctcagctc actgcagcct ctgcctcctg gggttaaagcg attctcccca caccacagac 540  
ccgctcctga gtagctggga ttacaggtgc ccgccaccat gactagctaa cgtttgtatt 600  
t 601

<210> 23  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 23  
aggcacgtca aggtcattgt ttttgtcttt gttttaagtc accccaggtg attctaaagc 60  
cgaagctctg caaagcacac cttgagaaac agagaactct tgtgctctcg ctctcttgac 120  
acttcaggtg caaaactttt gtcctaattgt cgttctcaaa cttacgcatg tgtgagaatc 180  
actgtgagag cttattgaaa ctgattgagg gaccccatat ctagagggcc tgattctata 240  
ggctctgagg aaggcccaag aatttgcata tttgcatctt gttttctttt cttttctttt 300  
ytgttttttt ttttttgaga tgaagtctca ccctgtcgcc cagactggag tgcagtggca 360  
tgatctcagc tcaactgcagc ctctgcctcc tgggttaaag cgattctccc cacacccagc 420  
accgctcctt gagtagctgg gattacaggt gcccgccacc atgactagct aacgtttgta 480  
tttttagtag agacgggggt ttcacatgt tggccaggct ggtctcaaac tcctgacctc 540  
aggtgatcca ctcacctcag cctcccaagg tcttgggatt actggtgtga gccaccgctg 600  
g 601

<210> 24  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 24  
tgcagcctct gcctcctggg ttaaagcgat tctccccaca cccagaccc gctcctgagt 60  
agctgggatt acaggtgccc gccaccatga ctagctaacg tttgtatttt tagtagagac 120  
gggggtttca ccatgttggc caggctgggt tcaaactcct gacctcaggt gatccactca 180  
cctcagcctc ccaaggtctt gggattactg gtgtgagcca ccgctgctcg ccagaatttg 240  
catttctaac aagtcccagg tgatgctgat gctgtgggtc cagggacaca ctttgagaac 300  
hgcttggtac tcaggcgata tgtggacagt agcgtcatct tcacctggga gcttcctgca 360  
gcatctcagg ccttgcccta cacctaccag atcagaatct gcattttaac tcaatccccg 420  
cgtgattctc atgcacctgg aagtttgaga aatatgacct tagaggagcc ggaatgtgaa 480  
accactggag gcagagatag atggagaata tctcttcttc tcacggatac taaagatgca 540  
acaaaaaggg ctgactctct ggggtgtgcac ccaggtgggg ctgatgaccg aaaagaggcc 600  
a 601

<210> 25  
<211> 601  
<212> DNA  
<213> Homo sapiens

<400> 25  
tgtgtgtgag gccggggagt gctgagagcc ccggaattcc tcagccttag tcccccgcca 60  
catagctaag aagtgagggg ggaggtgaga aggagtcact gccagcctc acttccggtg 120

```

gagtaccctg tctccttgtc agttctgtct ctggggacag ttgcctgctt tcacctctcc 180
ctccatcccc tcttctctca cagggaaaaa ttcaccttaa tattggaagt tcctctccta 240
gcaaagtcct tctcaggcac ccacaggcaa aaaggaaact aagcagagtt agggcttcca 300
kgcctagcca actacacgac tctcctcttg cttccctaag aaccagcgca aggggcagcg 360
tgggttccag catagatgga cctgtgttgg aatctctgca cgtgctgtgc tgacctggc 420
tagccattga cctctctgag cccttgtttc ctttccacta ggctctctga gggcaggggc 480
catgtctttt tctactgctct gtctgcactg agcactgtgc agggcacata ggaagttccc 540
ataaatgttt gtgggataaa ggaaataaaa ccttctctct tcctgtcccc cttgtgatgg 600
c 601

```

```

<210> 26
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 26
aaagtccttc tcaggcaccc acaggcaaaa aggaaactaa gcagagttag ggcttccagg 60
cctagccaac tacacgactc tcctcttgct tccctaagaa ccagcgcaag gggcagcgctg 120
ggttccagca tagatggacc tgtgttggaa tctctgcacg tgctgtgctg accctggcta 180
gccattgacc tctctgagcc cttgtttcct ttccactagg ctctctgagg gcaggggcca 240
tgtctttttc actgctctgt ctgcactgag cactgtgcag ggcacatagg aagttcccat 300
raatgtttgt gggataaagg aaataaaaacc ttctctcttc ctgtccccct tgtgatggct 360
ttgcacaagg cactgtcctt ggccagggtt gctaggctag tgtaggata aaccaggtat 420
attacaaatt ggagaaaatt tctcgttctt cttggaagaa ggtgctgtat catgaaacaa 480
gaatgtcttg attcccttct atgccaggta ctggggagaa acaggtgcct gataaccgtt 540
gatccaggca gaaataagca tactcctgct tcccaaggcc tgatgcttct ctccttcctc 600
c 601

```

```

<210> 27
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 27
ccttggaatga agaagcgtgg gaactctttg cttcctttcc ctcccgcagt gacatgccat 60
gccatgccac tgcctcttca tctggtccta tgacagtcac tcataagcac ccgcatgtac 120
ccggccctgc actagctcat gacagctgca gtcaattggg ccagggtgctg tatctcatcc 180
ggcctcctca gcaaccctct gagatactgg taatgtccct gatgaagata tttactgagg 240
cagaaatgga cgctcagtga agcaagggtc ctgatgttat agcaatgagc tatgagtggc 300
yagagggagg agataagctc aggcctgaca ccaaagccca tgctccttct agtcaaccac 360
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tgagccttgg ctgggtgctg aggccttcagg tacaatcatg gggtggaaga gccctcctct 480
ctctccacag tctggcacta tgacccttcc tggttattaa caaggcaaag agagagaggg 540
aagaaagcag gcaaataatg tgggttgcta ttcctagaga ttagaatttc aggaaggata 600
a 601

```

```

<210> 28
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 28
ttctctgacc cctccccctcc ggtgcggttcc gtatcaaagc tcctcaaacc ccgtcccccg 60
tgtgtcctgc tgtgtgcagc tcgctcttcc cttccttccct aagctatcca aggggatgga 120
cccaggctcg tggggagggtt ccacccttgg atccaggaag aaccctccac cctgcctcgt 180
gggtgggcca aaggctacag ggtgcttctt cctcttcccc caccctccact gtccctcatg 240
tgccatgggc ctgcctcccc agtgacctgc gaaagtggag catcgaggta ggagggaaac 300

```

```

rgcaaccagg gagtcctcga gcctggggct gccctacctc taccattcc cgcaccagag 360
ctttgccctt gcttggctgc ccgcctgcct ctttggggaa ctgagctcag aggcagggtgc 420
ttcagagaag gaaacaaaat gaggggtggc agggataaaa agtcacctcc attctctacc 480
tcccatgcag catgaacaca atttctctcc acctggctcc caaattttaa gatgtggacc 540
aaggcctgtg ggtactccag gggcaaggag agccctgggg tcagtgcacac tgtcaggcca 600
a
601

```

```

<210> 29
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 29
acccctcccc tccggtgcgt ttcgtatcaa agctcctcaa acccctcccc ccgtgtgtcc 60
tgctgtgtgc agctcgctct ttccttcctt cctaagctat ccaaggggat ggaccagggc 120
tcgtggggag gttccaccct tggatccagg aagaaccctc caccctgcct cgtgggtggg 180
ccaaaggcta caggggtgctt ctctctcttc cccaccccc actgtccctc atgtgccatg 240
ggcctgcctc cccagtgcac tgcgaaagtg gagcatcgag gtaggagga aacggcaacc 300
rgggagtcct cgagcctggg gctgccctac ctctacccat tccccgacca gagctttgcc 360
cttgcttggtg tgcgcgctg cctctttggg gaactgagct cagaggcagg tgcttcagag 420
aaggaaacaa aatgaggggt ggcagggata aaaagtcacc tccattctct acctcccatg 480
cagcatgaac acaatttctc tccacctggc tcccaaattt aaagatgtgg accaaggcct 540
gtgggtactc caggggcaag gagagccctg gggtcagtga cactgtcagg ccaaccatgc 600
a
601

```

```

<210> 30
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 30
gccagggact tgagaagtta tattgggcag tggctccaat ctgtggacca gtatttcagc 60
tttccctgaa gatcaggcag ggtgccattc attgtctttc tctcctagcc ccctcaggaa 120
agaaggacta tattgtact gtaccctagg ggttctggaa gggaaaacat ggaatcagga 180
ttctatagac tgataggccc tatccacaag ggccatgact gggaaaagg atgggagcag 240
aaggagaatt gggattttag ggtgcagcta cgctcaccct aaacttttg tggcctgggg 300
yatgtcttga ggcccagact gttaaccagg ctctgctggc ctgtttactc gtcaccacct 360
ctgcacctgc tgtcttgaga ctccatccag cccagggcac gccacctgct cctgagcctc 420
cactatctcc ctgtgacggg tgaacttcgt gtactgtgtc tcgggtccat atatgaattg 480
tgagcagggt tcatctattt taaacacaga tgtttacaaa ataaagatta tttcaaacca 540
ccggtgtggc tgccctggatg agtccttggg ggtaggtctc actcagaccc tggcagtgat 600
g
601

```

```

<210> 31
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 31
ggcagtggtc ccaatctgtg gaccagtatt tcagctttcc ctgaagatca ggcaggggtgc 60
cattcattgt ctttctctcc tagccccctc aggaaagaag gactatattt gtactgtacc 120
ctaggggttc tggaaggga aacatggaat caggattcta tagactgata ggccctatcc 180
acaagggcc aaggtatggg agcagaagga gaattgggat tttagggtgc 240
agctacgctc accctaaact tttggtggcc tggggcatgt cttgaggccc agactgttaa 300
scaggctctg ctggcctgtt tactcgtcac cacctctgca cctgctgtct tgagactcca 360
tccagcccca ggcacgccac ctgctcctga gcctccacta tctccctgtg acgggtgaac 420
ttcgtgtact gtgtctcggg tccatatatg aattgtgagc agggttcatc tattttaaac 480

```

```

acagatgttt acaaaataaa gattatttca aaccaccggt gtggctgcct ggatgagtcc 540
ttgggggtag gtctcactca gaccctggca gtgatgtggg agggagagag gcagtgtctgg 600
t                                                    601

```

```

<210> 32
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 32
ctgctggcct gtttactcgt caccacctct gcacctgctg tcttgagact ccatccagcc 60
ccaggcacgc cacctgctcc tgagcctcca ctatctccct gtgacgggtg aacttcgtgt 120
actgtgtctc ggggccatat atgaattgtg agcaggggtc atctatttta aacacagatg 180
tttacaaaat aaagattatt tcaaaccacc ggtgtggctg cctggatgag tccttggggg 240
taggtctcac tcagaccctg gcagtgatgt gggagggaga gaggcagtgc tggtagaagc 300
rgctccagaa gcaaaggcaa cagcagtaga gtgaccacgg aagcggcaaa cattgtcttc 360
ccttctctac cttccctagt gccacctgca gggaggccca aagcaaagcc cegtgtccct 420
gcattgggct ggcactgcag aaataagatg aaacacagtt atcgagagga tgctgaacat 480
ctatgagcag gttttaaagc caagatgagt ctcatctgtt tgtgtgggtc aggaacgggt 540
cttctgaag gcattgaggtg ggactggata atctttcaga tttgtgattg gataacctcg 600
g                                                    601

```

```

<210> 33
<211> 601
<212> DNA
<213> Homo sapiens

```

```

<400> 33
gcacgccacc tgctcctgag cctccactat ctccctgtga cgggtgaact tcgtgtactg 60
tgtctcgggt ccatatatga attgtgagca gggttcatct attttaaaca cagatgttta 120
caaaataaag attatttcaa accaccggtg tggctgcctg gatgagtcct tgggggtagg 180
tctcactcag accctggcag tgatgtggga gggagagagg cagtgtcgtt agaagcagct 240
ccagaagcaa aggcaacagc agtagagtga ccacggaagc ggcaaacatt gtcttccctt 300
stctaccttc cctagtgcc actgcaggga ggcccaaagc aaagccccgt tgccctgcat 360
tggtgtggca ctgcagaaat aagatgaaac acagttatcg agaggatgct gaacatctat 420
gagcaggttt taaagccaag atgagtctca tctgtttgtg tgggtcagga acgggtcttc 480
ctgaaggcat gaggtgggac tggataatct ttcagatttg tgattggata cctcggggga 540
gcagaggcag actgggatct caggactgca ggtatttcat actttgggat atggaattga 600
t                                                    601

```

```

<210> 34
<211> 7
<212> PRT
<213> Homo sapiens

```

```

<220>
<221> VARIANT
<222> (1)...(7)
<223> Xaa = Any Amino Acid

```

```

<400> 34
Gly Xaa Xaa Xaa Xaa Gly Lys
1                5

```

```

<210> 35
<211> 5

```

<212> PRT  
<213> Homo sapiens

<400> 35  
Asp Thr Ala Gly Gln  
1 5

<210> 36  
<211> 4  
<212> PRT  
<213> Homo sapiens

<220>  
<221> VARIANT  
<222> (1)...(4)  
<223> Xaa = Any Amino Acid

<400> 36  
Asn Lys Xaa Asp  
1

<210> 37  
<211> 5  
<212> PRT  
<213> Homo sapiens

<220>  
<221> VARIANT  
<222> (1)...(5)  
<223> Xaa = Any Amino Acid

<400> 37  
Glu Xaa Ser Ala Xaa  
1 5

<210> 38  
<211> 4  
<212> PRT  
<213> Homo sapiens

<220>  
<221> VARIANT  
<222> (1)...(4)  
<223> Xaa = Any Amino Acid

<400> 38  
Cys Ala Ala Xaa  
1